

# Cylinder Pressure Sensor

Type 6353A...

## for Continuous Monitoring

Sensor with ground isolated measuring element and M10x1 mounting thread designed with optimum service life for continuous cylinder pressure monitoring in diesel and gas engines. Because of its low thermal shock and high stability over the long term, this sensor is suitable for demanding monitoring and control tasks.

- Ground isolated
- Current output, 2-wire, 4 ... 20 mA
- High accuracy

### Description

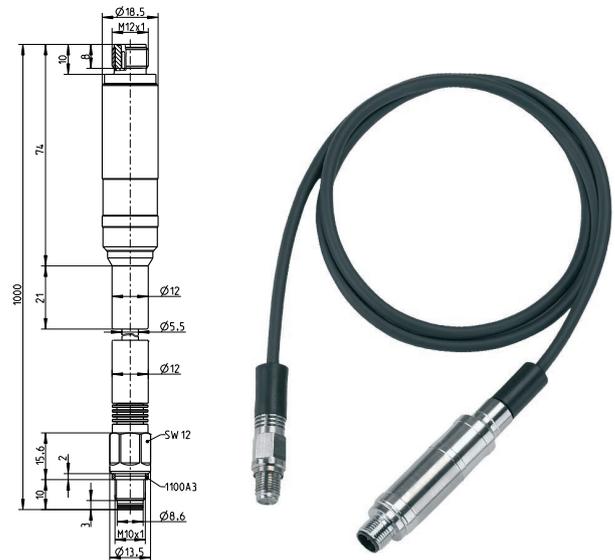
This ground isolated piezoelectric sensor and the in-line charge amplifier are connected by a robust integral cable. As a result of its patented "antistrain" design, the measuring element is insensitive to varying mounting conditions and resistant to dirt and contamination. The rugged diaphragm permits the sensor to be used for knock detection.

More than 16 000 operating hours can be achieved in Diesel- and gas engine operations.

### Mounting/Application

Optimum sensor life is achieved at an average temperature of 200 ... 300 °C on the sensor body. An angled gas channel can reduce the effect of flame on the diaphragm, and thereby minimize the short term drift of the sensor. In order to prevent pipe oscillations, the lengths of the gas channel should not exceed 30 mm. Strong gas oscillations may occur otherwise. In order to get the optimum signal quality a power supply with a low noise level must be used (see technical data).

In order to obtain a low-noise output signal, it is very important to use a power supply with a low noise voltage level (see technical data). If required Kistler will gladly give a recommendation for a suitable device.



### Technical Data

		...A14	...A24	...A34
Measuring range	bar	0 ... 103	0 ... 200	0 ... 300
Sensitivity	µA/bar	96,7 <sup>*)</sup>	50	33,3
Overload	bar	350		
Linearity at 23 °C	% FSO	<±0,75		
Operating temperature range				
Sensor front	°C	-50 ... 350		
at cable connection	°C	-20 ... 200		
Charge amplifier	°C	-10 ... 85		
Thermal shock at 1 500 1/min				
p <sub>mi</sub> = 9 bar	bar	<±0,5		
Change in sensitivity				
23 ... 350 °C	%	<±2		
200 ±20 °C	%	<±0,5		
Frequency range (-3 dB)				
(with load resistance 400 Ω)	Hz	0,01 ... 15 000		
Output current				
Noise (0,1 Hz ... 100 kHz)	mA	8 ... 20		
Signal stroke FSO	mA	10		
Zero point (no pressure)	mA	10		
Supply voltage	VDC	16 ... 30		
noise <1 kHz:	mV <sub>pp</sub>	<50		
noise >1 kHz:	mV <sub>pp</sub>	<10		
Noise signal				
Burden resistor 400 Ω	µA <sub>pp</sub>	<20		
Burden resistor 100 Ω	µA <sub>pp</sub>	<50		
Weight	g	≈150		
Mounting torque	N·m	15		
Connector (IP67)	8 pin	M12x1		

\*) Corresponding to 6,67 µA/PSI

Page 1/2

This information corresponds to the current state of knowledge. Kistler reserves the right to make technical changes. Liability for consequential damage resulting from the use of Kistler products is excluded.

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**Mounting Bore**

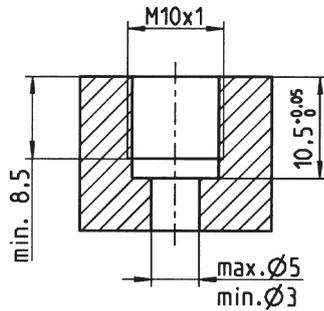


Fig. 1: Sensor bore



Fig. 2: Type 6353A... installed in indicator valve BSP 1/2" with M10 thread and additional stop valve for the sensor

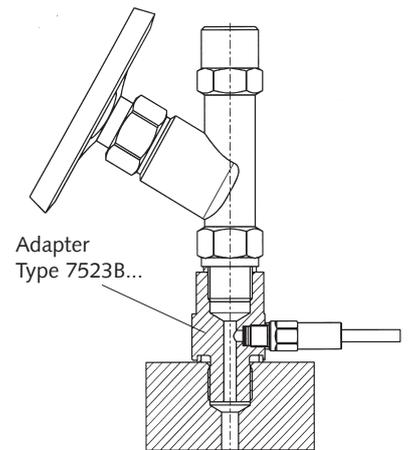


Fig. 3: Sensor installed with adapter Type 7523B... underneath the indicator valve

**Connecting Cables**

<b>Type 1700A69</b> , plug M12x1 at sensor side, one free cable end, Cable length l = 10 m, 3-channels	black = power supply	standard cable
	blue = unassociated	
	brown = power supply	
<b>Type 1787A...</b> , plug M12x1 at sensor side, one free cable end, Cable length A5 = 5 m, A20 = 20 m, 8-channels	Pin allocation, see manual for Type 6353A...	For calibration only, enables selection of time constant

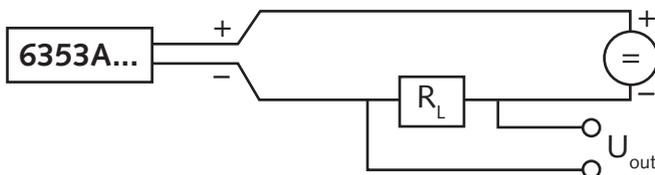


Fig. 4: R<sub>L</sub> = Load resistor  
U<sub>out</sub> = Power supply

**Accessories Included**

- Cr-Ni seal

**Optional Accessories**

- Torque wrench 8 ... 40 N·m
- Fork wrench SW 12 for Type 1300A11
- Adapter M14x1,25
- Adapter BSP R1/2"
- Adapter M20x1,5 ... M20x1,5
- Adapter BSW3/4 ... BSW3/4
- Adapter G1/2"x G1/2"
- Tubular socket wrench

**Type**

1100A3

**Type**

- 1300A11
- 1300A13
- 6582A1
- 6582A2
- 7523B01
- 7523B02
- 7523B03
- 1300A6

**Ordering Key**

Measuring range 0 ... 103 bar*	<b>14</b>
Measuring range 0 ... 200 bar	<b>24</b>
Measuring range 0 ... 300 bar	<b>34</b>

\* Equivalent to 1 500 psi

Type 6353A □



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